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| 09/678,142      | 10/03/2000  | Noriaki Sakamoto     | 10417-049001        | 6940             |

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EXAMINER

NORRIS, JEREMY C

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 07/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/678,142

Applicant(s)

SAKAMOTO ET AL.

Examiner

Jeremy Norris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 27-31 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8,11-18,20 and 23-25 is/are rejected.
- 7) ☒ Claim(s) 3,9,10,19,21 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of group I, claims 1-26 in Paper No. 5 is acknowledged.

### ***Specification***

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because of the phrase "In the present invention there is formed". Correction is required. See MPEP § 608.01(b).

### ***Drawings***

The drawings are objected to because the sectional views are not properly crosshatched (see MPEP 608.02). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Objections***

Claim 19 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 19 merely restates the limitations stated in claim 9.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8, 11, 15, 18, and 23-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites the limitation "the passive element" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 recites the limitation "the conductive coating film" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 15 recites the limitation "the ...second pads" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "the passive element" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 23 recites the limitation "the side surfaces" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 24 recites the limitation "the conductive coating film" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 25 recites the limitation "the conductive coating film" in line 2. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 2, 4-6, 12, 13, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,818,697, granted to Armezzani et al (hereafter Armezzani).

Armezzani discloses, referring to figure 4, a sheet-like board member (1) including a first planar surface and a second planar surface provided opposite the first surface, comprising: mask (5) which is formed on the second surface and has a

pattern corresponds to a plurality of first pads (8) formed in a semiconductor element mount region or in the vicinity of the semiconductor element mount region (see col. 2, lines 15-20) [claim 1], wherein the mask is made of photoresist (see col. 5, lines 10-40) [claim 2], wherein the mask is formed on a region corresponding to a wiring directly or integrally connected to the first pad [claim 4], wherein the first pads are bonding pads or pads on which solder balls (9) are to be fixed [claim 5], wherein a conductive coating film or a photoresist film which is substantially identical with a die pad is provided in the semiconductor element mount region [claim 6].

Additionally, Armezzani discloses a sheet-like board member (1) including a first planar surface and a second planar surface on which protuberances (8) of desired heights are formed and which is provided opposite the first planar surface, wherein the protuberances constitute a plurality of first pads in a semiconductor element mount region and the vicinity thereof [claim 12], wherein the protuberances constitute the wirings (7) integrally formed with the first pads (see figure 5) [claim 13], wherein the first pads and/or second pads are bonding pads, or pads on which solder balls or bumps are to be mounted [claim 15], wherein the protuberances constitute die pads to be provided in the semiconductor element mount region [claim 16].

Claims 1, 7, 8, 12-14, 17, 18, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,377,464, granted to Hashemi et al. (hereafter Hashemi).

Hashemi discloses, a sheet-like board member (102) including a first planar surface and a second planar surface provided opposite the first surface, comprising: mask (402) which is formed on the second surface and has a pattern corresponds to a

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plurality of first pads (116) formed in a semiconductor element mount region or in the vicinity of the semiconductor element mount region (see col. 5, lines 15-20) [claim 1], wherein a conductive coating film or photoresist film which is substantially identical with a passive element die pad (114) and/or outer lead electrode is formed on the second surface [claim 7], wherein the passive element is a chip resistor or a chip capacitor (see col. 4, line 1) [claim 8].

Additionally, Hashemi discloses a sheet-like board member (102) including a first planar surface and a second planar surface on which protuberances (116) of desired heights are formed and which is provided opposite the first planar surface, wherein the protuberances constitute a plurality of first pads in a semiconductor element mount region and the vicinity thereof [claim 12], wherein the protuberances constitute the wirings (402) integrally formed with the first pads [claim 13], wherein the protuberances constitute second pads (112) integrally formed with the wiring [claim 14], wherein the protuberances constitute passive element die pads and/or outer lead electrodes [claim 17], wherein the passive element is a chip resistor or chip capacitor [claim 18], wherein a plurality of patterns formed from the protuberances are taken as a unit, and the unit is arranged on the sheet-like board member in a matrix pattern (see figure 3), [claim 20].

***Allowable Subject Matter***

Claim 26 is allowed.

Claims 3, 9, 10, 19, 21 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 11 and 23-25 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 3 states the limitation "wherein the mask is made of a conductive film". This limitation, in conjunction with the other claimed limitations was neither found to be disclosed in, nor suggested by the prior art. Claims 9, 19 state the limitation "wherein patterns which are substantially identical with guide pins or guide holes into which the guide pins are to be inserted are formed in mutually opposing sides of the sheet-like board member." This limitation, in conjunction with the other claimed limitations was neither found to be disclosed in, nor suggested by the prior art. Claim 10 states the limitation "wherein the sheet-like board member is made of a pressed metal." This limitation, in conjunction with the other claimed limitations was neither found to be disclosed in, nor suggested by the prior art. Claim 11 states the limitation "wherein the sheet-like board member is formed from a conductive foil, and the conductive coating film is formed from material differing from that of the conductive foil." This limitation, in conjunction with the other claimed limitations was neither found to be disclosed in, nor suggested by the prior art. Claim 21 states the limitation "wherein the sheet-like board member is made of mainly Cu, Al, an Fe-Ni alloy, a Cu-Al multilayered member, or an Al-Cu-Al multilayered member". This limitation, in conjunction with the other claimed limitations was neither found to be disclosed in, nor suggested by the prior art. Claim 22 states the limitation "wherein a conductive coating film which is formed from material



differing from that of the protuberances is formed on the upper surfaces of the protuberances". This limitation, in conjunction with the other claimed limitations was neither found to be disclosed in, nor suggested by the prior art. Claim 23 states the limitation "wherein the side surfaces of the protuberances have an anchoring structure". This limitation, in conjunction with the other claimed limitations was neither found to be disclosed in, nor suggested by the prior art. Claim 24 states the limitation "wherein the conductive coating film constitutes an anvil shaped structure in the vicinity of the top surfaces of protuberances". This limitation, in conjunction with the other claimed limitations was neither found to be disclosed in, nor suggested by the prior art. Claim 25 states the limitation "wherein the conductive coating film is formed from Ni, Au, Ag, or Pd". This limitation, in conjunction with the other claimed limitations was neither found to be disclosed in, nor suggested by the prior art. Claim 26 states the limitation " wherein a plurality of first pads to be formed in a semiconductor element mount region or the vicinity thereof and protuberances which are to become wirings integrally formed with the first pads are formed within a region enclosed by an abutting region which is brought into contact with an upper metal mold". This limitation, in conjunction with the other claimed limitations was neither found to be disclosed in, nor suggested by the prior art.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


US 5,796,590 Klein.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Norris whose telephone number is 703-306-5737. The examiner can normally be reached on Mon.-Th., 9AM - 6:30 PM and alt. Fri. 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7724 for regular communications and 703-305-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JCSN  
July 14, 2002



KAMAND CUNEO  
PRIMARY EXAMINER